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(FILE 'USPAT' ENTERED AT 17:13:08 ON 03 FEB 1998)

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L1 1624 S MPEG#
L2 356 S INTERFRAME# AND INTRAFRAME#
L3 431 S I FRAME#
L4 705 S (B OR P) (W) FRAME#
L5 0 S CONVERT? (3A) L4 (2A) L3
L6 113 S L1 AND L2
L7 0 S L3 AND L5
L8 191 S L3 AND L4
L9 45 S L6 AND L8
L10 8858 S (SEGMENT? OR DIVID?) (3A) FRAME#
L11 65 S L10 AND L8

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1. 5,708,473, Jan. 13, 1998, Two stage video film compression method and system; Donald Mead, 348/416, 699; 382/244 [IMAGE AVAILABLE]
2. 5,703,793, Dec. 30, 1997, Video decompression; Adrian P. Wise, et al., 1/1 [IMAGE AVAILABLE]
3. 5,699,128, Dec. 16, 1997, Method and system for bidirectional motion compensation for compression of motion pictures; Naoya Hayashi, 348/699, 402, 407, 413, 416 [IMAGE AVAILABLE]
4. 5,692,092, Nov. 25, 1997, Recording and playback system for variable speed playback wherein more a.c. coefficients are allotted to the macroblocks in the central part of an image frame; Hiroaki Nogami, et al., 386/6, 33, 68, 111 [IMAGE AVAILABLE]
5. 5,687,275, Nov. 11, 1997, Trick play data identification methods and apparatus for use with digital video recording and playback devices; Frank Anton Lane, et al., 386/68, 67 [IMAGE AVAILABLE]
6. 5,684,917, Nov. 4, 1997, Apparatus and method for recording and reproducing digital video data in a variable-speed mode; Naofumi Yanagihara, et al., 386/80; 360/8; 386/81, 111, 124 [IMAGE AVAILABLE]
7. 5,668,599, Sep. 16, 1997, Memory management for an **MPEG2** compliant decoder; Dennis Phillip Cheney, et al., 348/402, 409, 415, 416 [IMAGE AVAILABLE]
8. 5,650,823, Jul. 22, 1997, Half pel motion estimation method for B pictures; Agnes Yee Ngai, et al., 348/415, 401, 402, 409, 467 [IMAGE AVAILABLE]
9. 5,642,174, Jun. 24, 1997, Scene change detecting device; Kimihiko Kazui, et al., 348/700, 415, 416, 699, 701; 386/4 [IMAGE AVAILABLE]
10. 5,635,985, Jun. 3, 1997, Low cost joint HD/SD television decoder methods and apparatus; Jill M. Boyce, et al., 348/402, 424, 556, 567, 568 [IMAGE AVAILABLE]
11. 5,623,344, Apr. 22, 1997, Digital video recording device with trick play capability; Frank A. Lane, et al., 386/81, 124 [IMAGE AVAILABLE]
12. 5,614,957, Mar. 25, 1997, Digital picture-in-picture decoder; Jill M. Boyce, et al., 348/567, 390, 424, 568 [IMAGE AVAILABLE]
13. 5,614,952, Mar. 25, 1997, Digital video decoder for decoding digital high definition and/or digital standard definition television signals; Jill M. Boyce, et al., 348/392, 404, 408, 419 [IMAGE AVAILABLE]
14. 5,603,012, Feb. 11, 1997, Start code detector; Martin W. Sotheran, 395/500; 370/450 [IMAGE AVAILABLE]
15. 5,596,581, Jan. 21, 1997, Recording and reproducing an **MPEG** information signal using tagged timing information; Ronald W. J. J. Saeijs, et al., 370/394, 522; 386/104 [IMAGE AVAILABLE]
16. 5,583,650, Dec. 10, 1996, Digital recording and playback device error correction methods and apparatus for use with trick play data; Frank A. Lane, et al., 386/81 [IMAGE AVAILABLE]
17. 5,579,183, Nov. 26, 1996, Recording and reproducing an **MPEG** information signal on/from a record carrier; Wilhelmus J. Van Gestel, et al., 360/48, 40 [IMAGE AVAILABLE]
18. 5,577,191, Nov. 19, 1996, System and method for digital video editing

- and publishing, using **intraframe**-only video data in intermediate steps; Mauro Bonomi, 345/502; 348/384; 382/166 [IMAGE AVAILABLE]
19. 5,576,902, Nov. 19, 1996, Method and apparatus directed to processing trick play video data to compensate for intentionally omitted data; Frank A. Lane, et al., 386/68, 109, 113 [IMAGE AVAILABLE]
20. 5,568,200, Oct. 22, 1996, Method and apparatus for improved video display of progressively refreshed coded video; Larry A. Pearlstein, et al., 348/845.1, 466 [IMAGE AVAILABLE]
21. 5,563,649, Oct. 8, 1996, System and method for transmitting video material; Kim V. W. Gould, et al., 348/17, 14 [IMAGE AVAILABLE]
22. 5,541,640, Jul. 30, 1996, Videophone for simultaneous audio and video communication via a standard telephone line; Craig R. Larson, 348/19; 379/93.17 [IMAGE AVAILABLE]
23. 5,535,008, Jul. 9, 1996, Method for jump-reproducing video data of moving picture coded with high efficiency; Toru Yamagishi, et al., 386/109 [IMAGE AVAILABLE]
24. 5,532,744, Jul. 2, 1996, Method and apparatus for decoding digital video using parallel processing; Olu Akiwumi-Assani, et al., 348/390, 400 [IMAGE AVAILABLE]
25. 5,483,287, Jan. 9, 1996, Method for forming transport cells for conveying compressed video data; Robert J. Siracusa, 348/845, 400; 370/474 [IMAGE AVAILABLE]
26. 5,455,629, Oct. 3, 1995, Apparatus for concealing errors in a digital

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video processing system; Huifang Sun, et al., 348/845.1, 402, 420, 426 [IMAGE
AVAILABLE]

27. 5,442,400, Aug. 15, 1995, Error concealment apparatus for MPEG-like
video data; Huifang Sun, et al., 348/402, 409, 413, 416, 466 [IMAGE
AVAILABLE]

28. 5,410,354, Apr. 25, 1995, Method and apparatus for providing compressed
non-interlaced scanned video signal; Kamil M. Uz, 348/845.2, 409, 441, 467
[IMAGE AVAILABLE]

29. 5,400,075, Mar. 21, 1995, Adaptive variable length encoder/decoder;
Tristan Savatier, 348/384; 341/67; 348/390, 400, 404; 375/241 [IMAGE
AVAILABLE]

30. 5,377,051, Dec. 27, 1994, Digital video recorder compatible receiver
with trick play image enhancement; Frank A. Lane, et al., 386/81, 124 [IMAGE
AVAILABLE]

31. 5,371,547, Dec. 6, 1994, Apparatus for excising (and reinserting)
specific data from a compressed video data stream to reduce its transmission
bandwidth; Robert J. Siracusa, et al., 348/426, 384, 409; 370/474; 375/240
[IMAGE AVAILABLE]

32. 5,365,272, Nov. 15, 1994, Method for formatting compressed video data
into transport cells; Robert J. Siracusa, 348/426, 384, 409; 370/473, 474;
371/69.1; 375/285 [IMAGE AVAILABLE]

33. 5,329,365, Jul. 12, 1994, Method and apparatus for providing compressed
non-interlaced scanned video signal; Kamil M. Uz, 348/469, 384, 415 [IMAGE
AVAILABLE]

34. 5,289,276, Feb. 22, 1994, Method and apparatus for conveying compressed
video data over a noisy communication channel; Robert J. Siracusa, et al.,
348/469, 384, 426, 473; 371/69.1; 375/285 [IMAGE AVAILABLE]

35. 5,262,854, Nov. 16, 1993, Lower resolution HDTV receivers; Sheau-Bao Ng,
348/420, 416, 699 [IMAGE AVAILABLE]

36. 5,247,363, Sep. 21, 1993, Error concealment apparatus for HDTV
receivers; Huifang Sun, et al., 348/616, 607, 700; 386/50 [IMAGE AVAILABLE]

37. 5,243,428, Sep. 7, 1993, Method and apparatus for concealing errors in a
digital television; Kiran S. Challapali, et al., 348/607, 603, 610; 371/31
[IMAGE AVAILABLE]

38. 5,231,384, Jul. 27, 1993, Apparatus for splitting video signal between
two channels; Joseph Kuriacose, 348/426, 388, 409, 415 [IMAGE AVAILABLE]

39. 5,214,507, May 25, 1993, Video signal quantization for an MPEG like
coding environment; Rangarajan Aravind, et al., 348/390, 415; 382/239 [IMAGE
AVAILABLE]

40. 5,212,549, May 18, 1993, Error concealment apparatus for a compressed
video signal processing system; Sheau-Bao Ng, et al., 348/409 [IMAGE
AVAILABLE]

41. 5,198,901, Mar. 30, 1993, Derivation and use of motion vectors in a
differential pulse code modulation system; William E. Lynch, 348/413, 419
[IMAGE AVAILABLE]

42. 5,185,819, Feb. 9, 1993, Video signal compression apparatus for
independently compressing odd and even fields; Sheau-Bau Ng, et al., 382/234;
348/409, 412; 382/233 [IMAGE AVAILABLE]

43. 5,146,325, Sep. 8, 1992, Video signal decompression apparatus for independently compressed even and odd field data; Sheau-Bao Ng, 348/384, 439; 382/236, 238 [IMAGE AVAILABLE]

44. 5,144,425, Sep. 1, 1992, Apparatus for hierarchically dividing video signals; Kuriacose Joseph, 348/419, 408 [IMAGE AVAILABLE]

45. 5,122,875, Jun. 16, 1992, An HDTV compression system; Dipankar Raychaudhuri, et al., 348/390, 423; 370/462, 522; 375/241, 253; 382/232, 239, 240 [IMAGE AVAILABLE]

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1. 5,715,009, Feb. 3, 1998, Picture signal transmitting method and apparatus; Katsumi Tahara, et al., 348/423; 386/40 [IMAGE AVAILABLE]
2. 5,708,767, Jan. 13, 1998, Method and apparatus for video browsing based on content and structure; Boon-Lock Yeo, et al., 1/1 [IMAGE AVAILABLE]
3. 5,708,473, Jan. 13, 1998, Two stage video film compression method and system; Donald Mead, 348/416, 699; 382/244 [IMAGE AVAILABLE]
4. 5,699,128, Dec. 16, 1997, Method and system for bidirectional motion compensation for compression of motion pictures; Naoya Hayashi, 348/699, 402, 407, 413, 416 [IMAGE AVAILABLE]
5. 5,691,768, Nov. 25, 1997, Multiple resolution, multi-stream video system using a single standard decoder; Mehmet Reha Civanlar, et al., 348/392, 423, 424 [IMAGE AVAILABLE]
6. 5,687,275, Nov. 11, 1997, Trick play data identification methods and apparatus for use with digital video recording and playback devices; Frank Anton Lane, et al., 386/68, 67 [IMAGE AVAILABLE]
7. 5,686,963, Nov. 11, 1997, Method for performing rate control in a video encoder which provides a bit budget for each frame while employing virtual buffers and virtual buffer verifiers; K. Metin Uz, et al., 348/404, 405, 419 [IMAGE AVAILABLE]
8. 5,684,714, Nov. 4, 1997, Method and system for a user to manually alter the quality of a previously encoded video sequence; Jay Yogeshwar, et al., 1/1 [IMAGE AVAILABLE]

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9. 5,682,204, Oct. 28, 1997, Video encoder which uses intra-coding when an activity level of a current macro-block is smaller than a threshold level; K. Metin Uz, et al., 348/409, 394, 403, 411 [IMAGE AVAILABLE]
10. 5,675,693, Oct. 7, 1997, Video signal reproducing apparatus with plural search functions; Junichi Kagoshima, 386/68; 360/8; 386/69, 70, 111 [IMAGE AVAILABLE]
11. 5,675,387, Oct. 7, 1997, Method and apparatus for efficient addressing of DRAM in a video decompression processor; Chris Hoogenboom, et al., 348/416, 409, 411, 415, 715, 716, 720, 721 [IMAGE AVAILABLE]
12. 5,661,523, Aug. 26, 1997, Moving picture coding method and an apparatus therefor; Yasuhiko Yamane, 348/390, 405, 415 [IMAGE AVAILABLE]
13. 5,659,539, Aug. 19, 1997, Method and apparatus for frame accurate access of digital audio-visual information; Mark A. Porter, et al., 395/200.61; 348/12, 13; 370/468; 395/200.66; 455/5.1 [IMAGE AVAILABLE]
14. 5,659,382, Aug. 19, 1997, Image conversion process and apparatus; Zbig Rybczynski, 352/46, 239 [IMAGE AVAILABLE]
15. 5,650,860, Jul. 22, 1997, Adaptive quantization; K. Metin Uz, 358/430; 348/390, 420; 382/232, 239 [IMAGE AVAILABLE]
16. 5,638,128, Jun. 10, 1997, Pixel interpolation filters for video decompression processor; Chris Hoogenboom, et al., 348/416, 718; 364/723 [IMAGE AVAILABLE]
17. 5,629,736, May 13, 1997, Coded domain picture composition for multimedia communications systems; Barin G. Haskell, et al., 348/387, 390, 405 [IMAGE AVAILABLE]
18. 5,623,424, Apr. 22, 1997, Rate-controlled digital video editing method and system which controls bit allocation of a video encoder by varying quantization levels; Faramarz Azadegan, et al., 364/715.02 [IMAGE AVAILABLE]
19. 5,623,344, Apr. 22, 1997, Digital video recording device with trick play capability; Frank A. Lane, et al., 386/81, 124 [IMAGE AVAILABLE]
20. 5,623,312, Apr. 22, 1997, Compressed-domain bit rate reduction system; Li Yan, et al., 348/416, 405, 409, 411, 412, 415 [IMAGE AVAILABLE]
21. 5,623,308, Apr. 22, 1997, Multiple resolution, multi-stream video system using a single standard coder; Mehmet R. Civanlar, et al., 348/392, 423, 424 [IMAGE AVAILABLE]
22. 5,621,794, Apr. 15, 1997, Moving-picture encipherment method and system, and enciphered moving-picture decipherment method and system; Masahiro Matsuda, et al., 380/20, 9 [IMAGE AVAILABLE]
23. 5,614,954, Mar. 25, 1997, Motion compensation apparatus for use in an image encoding system; Hae-Mook Jung, 348/413, 699 [IMAGE AVAILABLE]
24. 5,612,900, Mar. 18, 1997, Video encoding method and system which encodes using a rate-quantizer model; Faramarz Azadegan, et al., 395/200.77 [IMAGE AVAILABLE]
25. 5,606,655, Feb. 25, 1997, Method for representing contents of a single video shot using frames; Farshid Arman, et al., 345/440, 302 [IMAGE AVAILABLE]
26. 5,592,226, Jan. 7, 1997, Method and apparatus for video data compression using temporally adaptive motion interpolation; Jungwoo Lee, et al., 348/413,

402, 407, 416, 700 [IMAGE AVAILABLE]

27. 5,583,650, Dec. 10, 1996, Digital recording and playback device error correction methods and apparatus for use with trick play data; Frank A. Lane, et al., 386/81 [IMAGE AVAILABLE]

28. 5,583,573, Dec. 10, 1996, Video encoder and encoding method using intercomparisons of pixel values in selection of appropriation quantization values to yield an amount of encoded data substantially equal to nominal amount; Yoshinori Asamura, et al., 348/405 [IMAGE AVAILABLE]

29. 5,576,902, Nov. 19, 1996, Method and apparatus directed to processing trick play video data to compensate for intentionally omitted data; Frank A. Lane, et al., 386/68, 109, 113 [IMAGE AVAILABLE]

30. 5,568,200, Oct. 22, 1996, Method and apparatus for improved video display of progressively refreshed coded video; Larry A. Pearlstein, et al., 348/845.1, 466 [IMAGE AVAILABLE]

31. 5,565,920, Oct. 15, 1996, Method and apparatus for video data compression using temporally adaptive motion interpolation; Jungwoo Lee, et al., 348/398, 413, 416, 699, 700 [IMAGE AVAILABLE]

32. 5,559,558, Sep. 24, 1996, Apparatus and methodology for coding digital video signals to improve picture quality with minimal overhead; Naohisa Kitazato, 348/416, 411, 412, 414, 415 [IMAGE AVAILABLE]

33. 5,543,932, Aug. 6, 1996, Digital video signal recording apparatus and digital video signal reproducing apparatus; Ching-Fang Chang, et al., 386/81; 348/423; 386/111 [IMAGE AVAILABLE]

34. 5,539,467, Jul. 23, 1996, **B-frame** processing apparatus including a motion compensation apparatus in the unit of a half pixel for an image

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decoder; Ki H. Song, et al., 348/402, 699 [IMAGE AVAILABLE]

35. 5,539,466, Jul. 23, 1996, Efficient coding apparatus for picture signal and decoding apparatus therefor; Katsuji Igarashi, et al., 348/401, 404, 412 [IMAGE AVAILABLE]

36. 5,532,744, Jul. 2, 1996, Method and apparatus for decoding digital video using parallel processing; Olu Akiwumi-Assani, et al., 348/390, 400 [IMAGE AVAILABLE]

37. 5,521,841, May 28, 1996, Browsing contents of a given video sequence; Farshid Arman, et al., 345/328, 112 [IMAGE AVAILABLE]

38. 5,521,630, May 28, 1996, Frame sampling scheme for video scanning in a video-on-demand system; Ming-Syan Chen, et al., 348/7, 12 [IMAGE AVAILABLE]

39. 5,510,844, Apr. 23, 1996, Video bitstream regeneration using previously agreed to high priority segments; Glenn L. Cash, et al., 348/845.2, 426, 466 [IMAGE AVAILABLE]

40. 5,510,842, Apr. 23, 1996, Parallel architecture for a high definition television video decoder having multiple independent frame memories; Larry Phillips, et al., 348/426, 416 [IMAGE AVAILABLE]

41. 5,483,287, Jan. 9, 1996, Method for forming transport cells for conveying compressed video data; Robert J. Siracusa, 348/845, 400; 370/474 [IMAGE AVAILABLE]

42. 5,455,629, Oct. 3, 1995, Apparatus for concealing errors in a digital video processing system; Huifang Sun, et al., 348/845.1, 402, 420, 426 [IMAGE AVAILABLE]

43. 5,442,400, Aug. 15, 1995, Error concealment apparatus for MPEG-like video data; Huifang Sun, et al., 348/402, 409, 413, 416, 466 [IMAGE AVAILABLE]

44. 5,428,403, Jun. 27, 1995, Motion vector estimation, motion picture encoding and storage; Derek Andrew, et al., 348/699, 402, 413 [IMAGE AVAILABLE]

45. 5,418,569, May 23, 1995, Method and apparatus for predictive coding of moving images while adaptively changing the method in accordance with them; Ichiro Ando, 348/405, 415 [IMAGE AVAILABLE]

46. 5,410,354, Apr. 25, 1995, Method and apparatus for providing compressed non-interlaced scanned video signal; Kamil M. Uz, 348/845.2, 409, 441, 467 [IMAGE AVAILABLE]

47. 5,404,174, Apr. 4, 1995, Scene change detector for detecting a scene change of a moving picture; Takayuki Sugahara, 348/700, 412, 415 [IMAGE AVAILABLE]

48. 5,400,075, Mar. 21, 1995, Adaptive variable length encoder/decoder; Tristan Savatier, 348/384; 341/67; 348/390, 400, 404; 375/241 [IMAGE AVAILABLE]

49. 5,377,051, Dec. 27, 1994, Digital video recorder compatible receiver with trick play image enhancement; Frank A. Lane, et al., 386/81, 124 [IMAGE AVAILABLE]

50. 5,371,547, Dec. 6, 1994, Apparatus for excising (and reinserting) specific data from a compressed video data stream to reduce its transmission bandwidth; Robert J. Siracusa, et al., 348/426, 384, 409; 370/474; 375/240 [IMAGE AVAILABLE]

51. 5,365,272, Nov. 15, 1994, Method for formatting compressed video data into transport cells; Robert J. Siracusa, 348/426, 384, 409; 370/473, 474; 371/69.1; 375/285 [IMAGE AVAILABLE]
52. 5,343,250, Aug. 30, 1994, Multiple picture/sound signals decoding apparatus; Ryuichi Iwamura, 348/564, 400 [IMAGE AVAILABLE]
53. 5,329,365, Jul. 12, 1994, Method and apparatus for providing compressed non-interlaced scanned video signal; Kamil M. Uz, 348/469, 384, 415 [IMAGE AVAILABLE]
54. 5,289,276, Feb. 22, 1994, Method and apparatus for conveying compressed video data over a noisy communication channel; Robert J. Siracusa, et al., 348/469, 384, 426, 473; 371/69.1; 375/285 [IMAGE AVAILABLE]
55. 5,287,178, Feb. 15, 1994, Reset control network for a video signal encoder; Alfonse A. Acampora, et al., 348/384, 469; 370/474; 375/242 [IMAGE AVAILABLE]
56. 5,278,647, Jan. 11, 1994, Video decoder using adaptive macroblock leak signals; Rajesh Hingorani, et al., 348/416, 390 [IMAGE AVAILABLE]
57. 5,262,854, Nov. 16, 1993, Lower resolution HDTV receivers; Sheau-Bao Ng, 348/420, 416, 699 [IMAGE AVAILABLE]
58. 5,247,363, Sep. 21, 1993, Error concealment apparatus for HDTV receivers; Huifang Sun, et al., 348/616, 607, 700; 386/50 [IMAGE AVAILABLE]
59. 5,243,428, Sep. 7, 1993, Method and apparatus for concealing errors in a digital television; Kiran S. Challapali, et al., 348/607, 603, 610; 371/31 [IMAGE AVAILABLE]

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60. 5,231,384, Jul. 27, 1993, Apparatus for splitting video signal between two channels; Joseph Kuriacose, 348/426, 388, 409, 415 [IMAGE AVAILABLE]
61. 5,214,507, May 25, 1993, Video signal quantization for an MPEG like coding environment; Rangarajan Aravind, et al., 348/390, 415; 382/239 [IMAGE AVAILABLE]
62. 5,212,549, May 18, 1993, Error concealment apparatus for a compressed video signal processing system; Sheau-Bao Ng, et al., 348/409 [IMAGE AVAILABLE]
63. 5,175,618, Dec. 29, 1992, Compression method for interlace moving image signals; Motoharu Ueda, et al., 348/416, 699 [IMAGE AVAILABLE]
64. 5,144,425, Sep. 1, 1992, Apparatus for hierarchically dividing video signals; Kuriacose Joseph, 348/419, 408 [IMAGE AVAILABLE]
65. 5,144,424, Sep. 1, 1992, Apparatus for video data quantization control; Tristan Savatier, 348/405, 420 [IMAGE AVAILABLE]

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